SUSTAINABILITY CHALLENGE —REDUCING COST OF BUS TRAVEL IN COVENTRY

- Introduction to sustainability
- Background and current challenges of bus travel
- Solutions and ways to implement policies
- Evaluation and conclusion

Sustainability: satisfying the needs of current generations without compromising the ability of future generations to meet their own needs.

Three Types of Sustainability:

--social sustainability: preserving social capital by investing in beneficial services.

--economic sustainability: maintaining long-term growth.

--environmental sustainability: preserving natural capital (eg. air, land, water)

Coventry population: 438,732 (9th in UK)

BIG ISSUE: High time cost in bus transport

--To go to peripheral areas of Coventry relative to City Centre, people have to change stops in the City Centre first. eg. Combee Country Park in the eastern part of Coventry

--traffic congestion during peak hours (both private vehicles and public transport suffer, but the "stopping" nature of buses creates high use of private vehicles)

Our aim: to reduce time cost and encourage more bus use (switch from private to public transport)

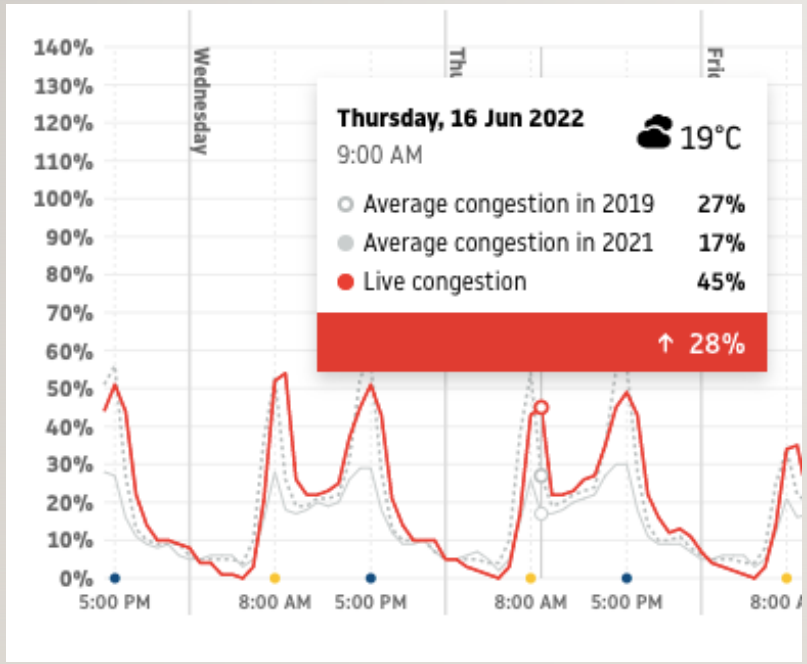
Stakeholders: commuters, local tourists, car & bus drivers

PEAK TRAFFIC CONGESTION HOURS

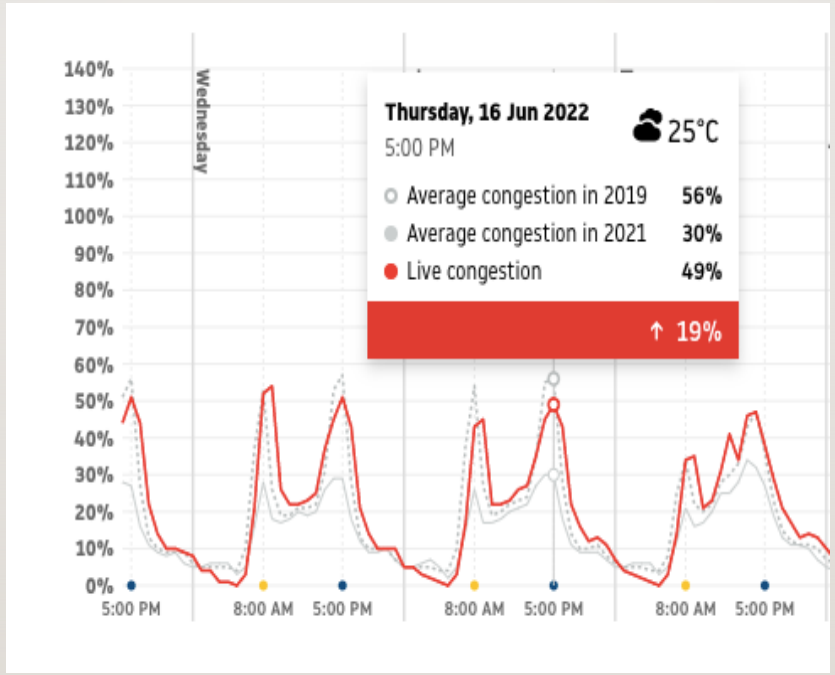
(roughly above 40% congestion levels)

Congestion is measured in terms of travel time relative to that of non-congested conditions

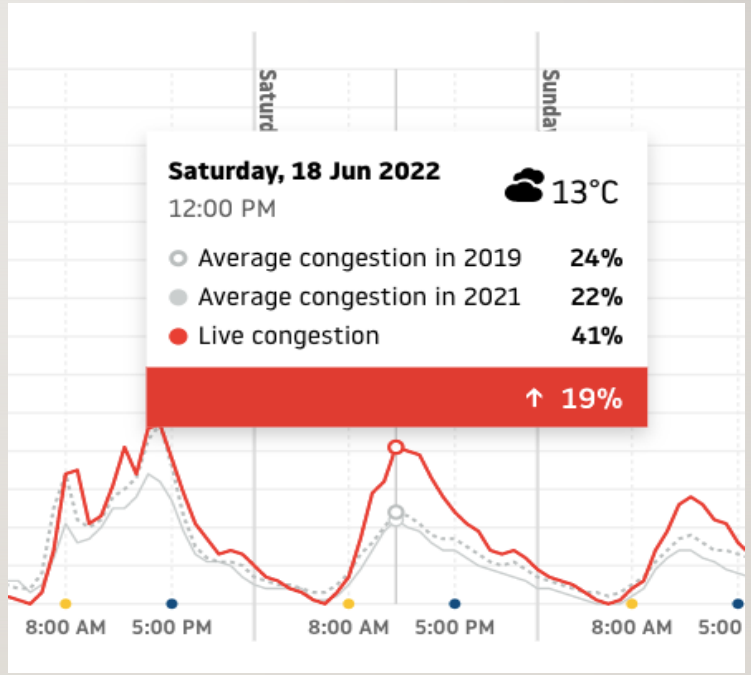
For example, a 30-minute trip in non-congested conditions takes 12 minutes longer when congestion levels are at 40%



8-10 AM on weekdays



3-6 PM on weekdays

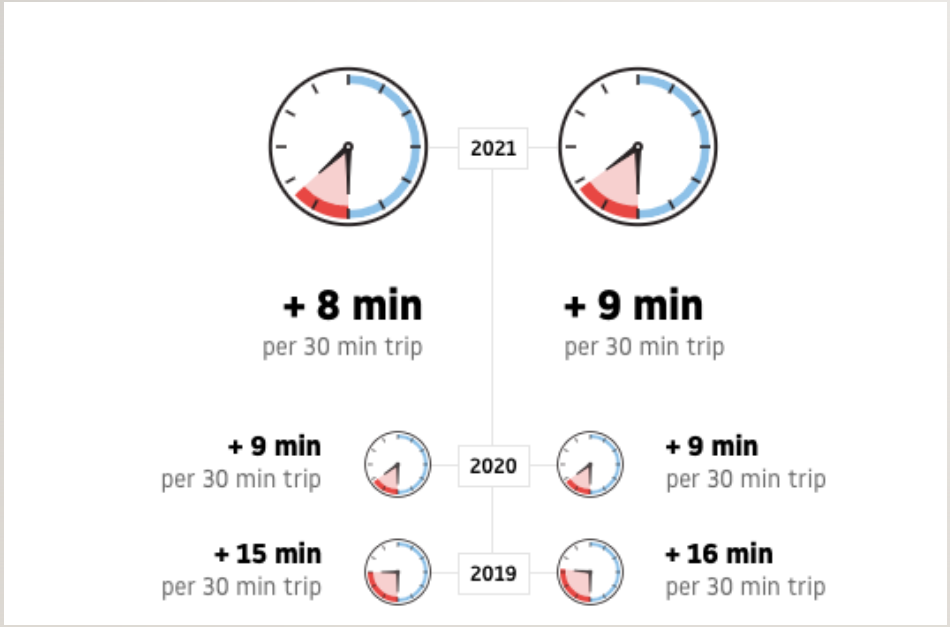


1-2 PM on weekends

Data provided by TomTom Traffic Index

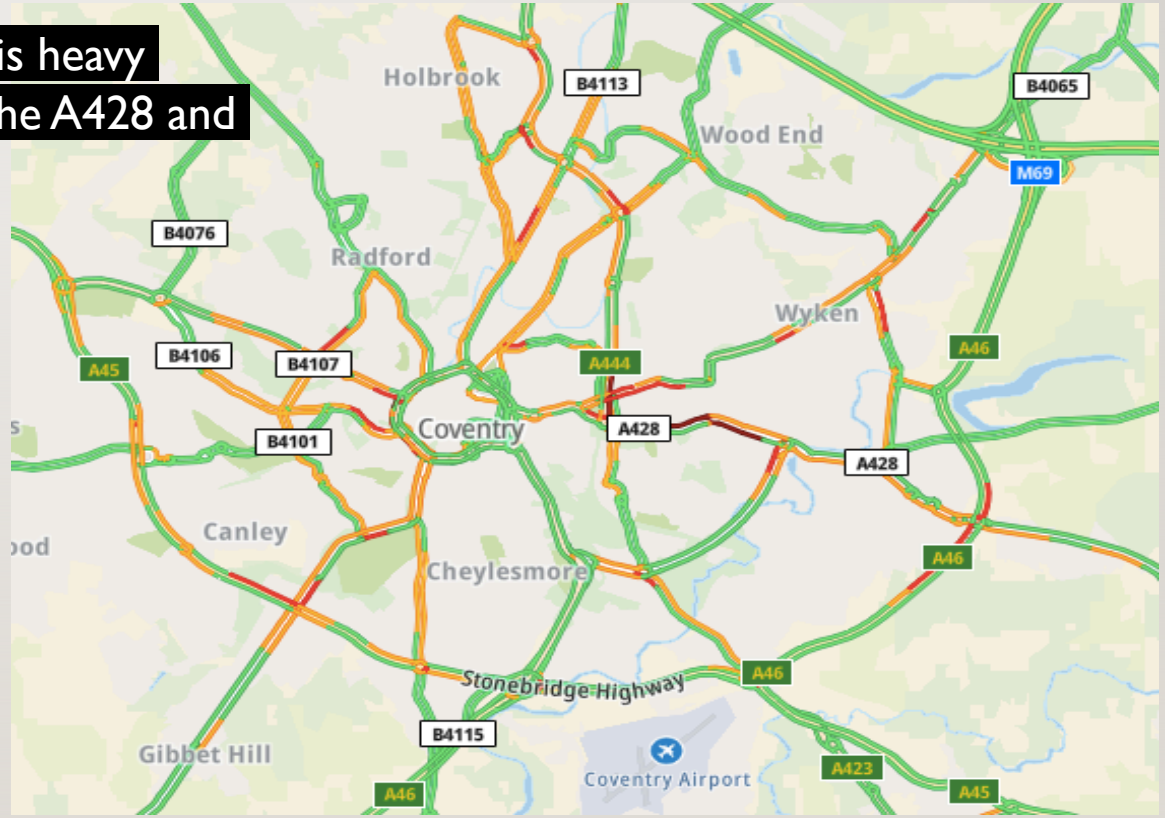
AN ANALYSIS OF CONGESTION HOURS

- Time lost to traffic accounts to roughly:



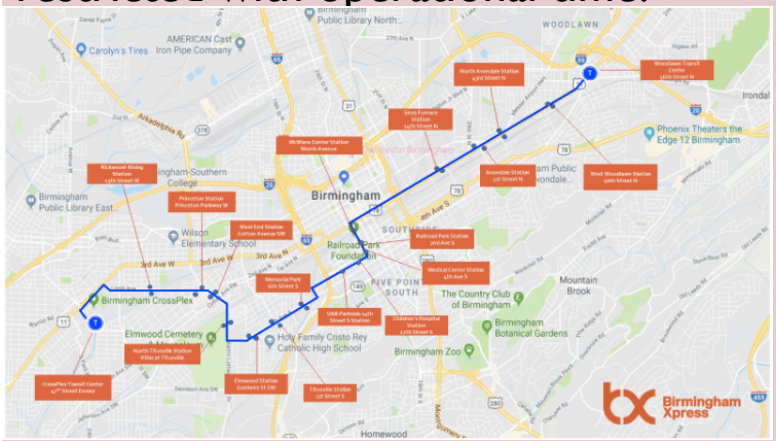
This is roughly **63 hours (2 days 15 hours) annually**

Traffic is heavy along the A428 and B4113

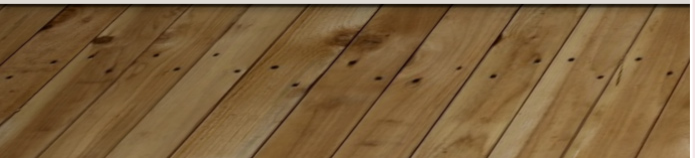


Data provided by TomTom Traffic Index

III. SOLUTIONS AND WAYS TO IMPLEMENT POLICIES

Solutions (bus use in traffic congestion)	Case studies and ways to implement
<u>Establishing bus-only lanes along certain routes during peak-rush hours</u> - Will heavily assist in **cutting down on not only emissions by buses themselves,** but will also dissuade drivers from using certain roads, thereby assisting with **diminishing overall congestion and emissions** **-** Can be done in collaboration with bus companies, as there is **a privatised incentive of lower costs** **- Low cost:** no need for significant construction or service -Currently 7 bus lanes in Coventry. 9 bus lanes were removed and 4 were suspended.	- Transport Act 2000 and the Bus Lane Contraventions (Approved Local Authorities) (England) Order 2005 - Case study **Birmingham** -enforcing the bus lanes in 20 locations&Installing cameras -Using Camera cars to enforce any bus lanes -Part of the Birmingham Connected **Liverpool** Currently in Liverpool, 5 lanes were restricted with operational time. 

IV. AREAS FOR FUTURE CONSIDERATION



Solutions (bus use for peripheral travel)	Case studies and ways to implement
<u>Demand Responsive Transport (DRT)</u> Definition: flexible shared transport for people wanting to travel to the same place -Add buses offering this services tailored to more people's needs and wants -a pilot project underway based on the University of Warwick campus.	- Trial DRT services were implemented around UK, including UoW, as the service West Midlands Bus on Demand. - The app has 62 ratings on Apps Store and 52 on Google Play with 4.4 ratings. (Though it is relatively low in comparison there are 1110 ratings for My Warwick in Google Play) - Greater Manchester have launched one of the largest DRT schemes in the UK(Local Link &Ring Ride) and trials(Future Mobility Zones), and is exploring launching fully integrated DRT services
<u>Urban Design</u> - Planning and Adjustment: Add 3 to 4 looped bus routes for peripheral travel - Construct new stops outside the central area and connect the peripheral routes - People can go to the destination directly rather than having to first change stops in Coventry City Centre	Bristol, has adopted the mass transit policy, * see Bristol Joint local Transport Plan 4 (JLTP4) - Comprehensive plan across the region - Achieve all goals by 2036 - High enthusiasm in local response Latest draft received 4,200 responses over 6 weeks - Lead by the West of England Combined Authority and councils of cities around is involved. Bristol Mass transit and public transport plans - Planed Investment of £1.5 million and public consultation for options in 2021

For our proposed solutions

-efficient travel ➡️ productivity of commuters ➡️ output growth ➡️ economic sustainability

-better quality of infrastructure satisfies more people's needs and generate convenience ➡️ social welfare and sustainability

-more use of buses and less use of private vehicles ➡️ less air pollution through toxic gas emissions ➡️ environmental sustainability

Coinciding with 2 of 17 Sustainability Development Goals (SDGs) of the 2030 Agenda for Sustainability development

1. industry, innovation and infrastructure 2. sustainable cities and communities

Tomtom.com. 2022. "Coventry Traffic Report: Tomtom Traffic Index." Available at: <https://www.tomtom.com/en_gb/traffic-index/coventry-traffic/> [Accessed 26 June 2022].

Coventry City Council, Draft transport strategy. *Coventry City Council*. Available at: https://www.coventry.gov.uk/transport-strategy-2/transport-strategy/4 [Accessed June 26, 2022].

Coventry City Council, Transport strategy summary. *Coventry City Council*. Available at: https://www.coventry.gov.uk/transport-strategy-2/transport-strategy-summary [Accessed June 26, 2022].

bristol.gov.uk. Mass transit and public transport plans for Bristol. Available at: https://www.bristol.gov.uk/streets-travel/mass-transit-public-transport-plans [Accessed June 26, 2022].

bristol.gov.uk. Joint local transport plan 2020 to 2036 Joint Local Transport Plan - Combined Authority. Available at: https://www.bristol.gov.uk/streets-travel/joint-local-transport-plan-2020-to-2036 [Accessed June 26, 2022].

Wang, C., Quddus, M., Enoch, M. *et al.* Multilevel modelling of Demand Responsive Transport (DRT) trips in Greater Manchester based on area-wide socio-economic data. *Transportation* **41,** 589–610 (2014). https://doi.org/10.1007/s11116-013-9506-1

GMCA, Greater Manchester's Bus Service Improvement Plan. Available at: https://democracy.greatermanchester-ca.gov.uk/documents/s17274/15a%20Appendix%202%20Greater%20Manchester%20Bus%20Service%20Improvement%20Plan.pdf [Accessed June 26, 2022].

Warwick Estates, West Midlands Bus on Demand. Available at: https://warwick.ac.uk/services/estates/transport/buses/busondemand/ [Accessed June 26, 2022].